Ted Nelson, Project Xanadu and Keio University Shonan Fujisawa Campus. Email ted@xanadu.net

Developer and Strategic Partner contact: Marlene Mallicoat, marlene@xanadu.net

The ZigZag™ Personal Operating System

ZigZag maps all data and software into a uniquely explorable world: a visualization and application space of n-dimensional hypercells. We may think of it in several ways:

As a
PROPOSED SHARABLE REFERENCE STRUCTURE FOR ALL NET APPLIANCES
This generalized interactive world adapts well to small display panels, small keypads and audio output. Its extremely simple structure turns out to yield a default visualization and interface for all system levels, seamlessly navigated with a few keys.

As an **INTERFACE SYSTEM FOR SMALL-WINDOW EQUIPMENT**
  - PDAs, Telephones, Internet Appliances, Pagers, Smart Cards
  - Cameras, Audio Equipment, Recording Devices, Rice Cookers, Whatever

As an **INTERFACE SYSTEM AT THE EXTREME LIMITS**
  - Audio output only, for the blind or for workers whose eyes are busy
      (one voice announces cell movements, another reads cell contents)
  - 3D menu system and application space for SGI, VRML, OpenGL, Java3D
      -- shows 3D slice of our hyperworld, instead of 2D slice

As a **PERSONAL OPERATING SYSTEM, emphasizing**
  - PERSONAL DATA: Schedules, Accounts, Addresses, Lists, Texts
  - STRUCTURES OF DISCRETE ELEMENTS

SPECIAL BENEFITS OF THIS WORLD
  - FUNDAMENTAL SIMPLICITY OF STRUCTURE
  - SPATIAL VIEWING AND EXPLORING, MANY DIFFERENT VIEWS
  - UNITY OF DATA: EACH ITEM LINKED TO ALL POINTS OF USE
      -- allows you to see the same thing in different contexts without moving it or copying it
  - DEFAULT SIMPLE INTERFACE-- no icons, no metaphors, no agents
  - NO SEGREGATION INTO 'APPLICATIONS'
  - SCRIPTABLE
  - DOCKABLE to Windows98, other systems

[for W3 Conf on Mobile Computing]

A COMPACT REFERENCE STRUCTURE FOR MOBILE AND UBIQUITOUS COMPUTING

Mobile and ubiquitous computing should have a shared conceptual space, not merely a shared address space.

Having merely a vast number of domain-specific references and user presentations, with no common language, would relinquish any generality of human interface or transferrable concepts.

This confronts us with finding a common reference level for activities as diverse as pricing and scheduling, news and sports, consumer appliances, animal and child location, financial microtransactions, medical and   industrial and vehicle monitoring, and of course many more.

We have implemented a prototype of a conceptually simple, generalized interactive world which is adaptable to small display panels, small keypads and audio output. An extremely simple structure turns out to yield a default visualization and interface for all system levels, seamlessly navigated with a few keys.

This common reference level is built of spatial references-- cells with constrained dimensional connections, and operations upon these cells and connections.   All persistent states are maintained within this framework.

This design has yielded some surprising benefits.